

ABSTRACT

An aperture for reducing tilt sensitivity in normal incidence optical metrology is formed to include one or more holes. The aperture is positioned to partially occlude one-half of the pupil of a normal incidence objective. A probe beam is projected to fill the pupil of
5 the objective. The portion of the incident probe beam that passes through the aperture is reduced in cross-sectional profile. As a result, after reflection by the sample, that portion of the probe beam underfills the non-occluded portion of the pupil. The portion of the incident probe beam that passes through the non-occluded portion of the pupil overfills the occluded pupil upon reflect by the sample. The combination of underfilling and overfilling reduces the
10 sensitivity of the objective to tilting of the sample.